

Magnetotail Compression by Interplanetary Shocks: Observations and Modeling

Observations from WIND, IMP-8 and GEOTAIL spacecraft are used to study plasma sheet and magnetotail lobe dynamics when interplanetary shocks compress the Earth's magnetotail. Typically it is found that the tail lobe magnetic field magnitudes increase monotonically to a steady state value within ~ 5 to 15 min. The measured tail magnetic field compression will be compared with standard magnetotail models, and predictions for plasma instabilities will be presented.